DOCUMENT RESUME

ED 206 740 TM 810 703

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TITLE Teacher Affective Reactions and Inferred Causal Attributions for Failure.
PUB DATE Apr 81
NOTE 17p.; Paper presented at the Annual Meeting of the American Educational Research Association (65th, Los Angeles, CA, April 13-17, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Failure; Affective Behavior; *Attribution Theory; Elementary Education; Higher Education; *Self Esteem; Student Teacher Relationship; *Teacher Response
IDENTIFIERS Inferential Reasoning

ABSTRACT

Five subject groups (adults and 11-, 9-, 7-, and 5-year-olds) were given affective reactions by a teacher, such as anger and pity, and asked to infer the teacher's causal attributions regarding why a student failed, such as low ability of lack of effort. There were systematic linkages between the following affect-attribution pairings: anger-effort, pity-ability; guilt-teacher/task; and surprise-effort. The inferences of the adults, 11-, and 9-year-olds were quite similar, and children as young as five years of age provided some evidence that they can infer thoughts from affects. The implications of these affect-attribution linkages for students' self-esteem were considered. (Author/GK)

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# Teacher Affective Reactions and Inferred Causal Attributions for Failure

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Paper presented at the Annual Meeting of the American Educational Research Association, April, 1981.

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ABSTRACT

Five subject groups: adults, and 11-,9-,7-, and 5-year-olds, were given affective reactions by a teacher, such as anger and pity, and asked to infer the teacher's causal attributions regarding why a student failed, such as low ability or lack of effort. There were systematic linkages between the following affect-attribution pairings: anger-effort; pity-ability; guilt-teacher/task; and surprise-effort. The inferences of the adults, 11-, and 9-year-olds were quite similar, and children as young as five years of age provided some evidence that they can infer thoughts from affects. The implications of these affect-attribution linkages for students' self-esteem were considered.

The purpose of the research reported in this paper is to examine, in an achievement setting, the association between affective communications and causal attributions. The investigation is part of a larger program of attributional research which has as one goal the identification of communicated affect-self concept linkages in achievement-related contexts. It is believed that affects convey information about the person to whom the affect is being communicated and, in turn, this information may influence the recipient's self-concept. For example, if a teacher displays anger toward a child who fails an exam, the student may understand that he failed because he did not exert enough effort. This may influence his feeling that he is, indeed, a smart individual who only needs to push himself a little more to succeed.

The central hypotheses guiding this research are: 1) if failure elicits anger from the teacher, then the student infers that he or she has not expended sufficient energy, whereas, 2) if failure elicits pity (sympathy), then the student infers that he or she is low in ability. The association between communicated emotions and personal attributions are theorized to be a consequence of the following process:

Step 1. When observed failure is attributed by teachers to a lack of effort versus a lack of ability, teachers display anger and pity, respectively.

Step 2. Teachers communicate these affects.

Step 3. The affective communications are understood by the student to mean that failure is respectively being attributed to a lack of effort and a lack of ability.

Step 4. Attributions by teachers are an important source

used by the student to explain his own achievement outcomes.

The hypothesized affect-attribution relations were suggested by research with adults in both the helping and achievement domains. These investigations demonstrated that if a person's failure is perceived to be the consequence of insufficient effort expenditure, others respond with anger whereas failure attributed to lack of ability evokes sympathetic responses (Weiner, 1980a, 1980b). If a lack of effort attribution leads to an emotional display of anger, then it follows that, given anger as the displayed affect, a lack of effort ascription will be inferred.

The research reported in this paper bears only upon Step 3 in the proposed sequence and examines whether affective communications can serve as attributional cues. This research also is conducted within a developmental context that considers the emergence of relations among communicated affects and inferred causal attributions.

General Procedure

To explore the hypotheses regarding the relations between affects and inferred attributions, teachers' reactions to student failure such as anger and pity are given, and students rate their beliefs about perceived causes such as lack of effort and low ability. Developmental changes are examined by gathering data representing five age groups: college students, and 11-,9-,7-, and 5-year-olds. Two different methodologies were chosen--one appropriate for older subjects and one for the younger age group. Hence, developmental comparisons are presented between college subjects, 11-year-olds, and one group of 9-year-olds (Experiment 1),

and between a second group of 9-year-olds, 7-year-olds, and 5-year-olds (Experiment 2).

In Experiment 1, the relations between additional affective reactions to failure by others (guilt, surprise, and sadness) and salient causes of failure (task difficulty, teacher behavior, and bad luck) also are examined. While no specific hypotheses were formulated, these affects and attributions were included because of their established importance in achievement-related contexts (see Weiner, Russell, & Lerman, 1978, 1979).

Experiment 1: Adults, Eleven- and Nine-Year-Olds

We tested 70 undergraduates enrolled at the University of California, Los Angeles. The children were 48 eleven-year-olds and 49 nine-year-olds attending a university-affiliated, non-graded elementary school. The school is comprised of students of mixed ethnic backgrounds, varied socio-economic levels, and different cognitive abilities. Adult subjects were tested in small groups while the children, because of the complexity of the task, were tested individually.

All subjects read scenarios with the following format:

> A student failed a test and the teacher got (felt, was) _____. Why did the teacher think the student failed?

Five affects were inserted in the blank: pity, anger, surprise, sadness, and guilt. After subjects read a scenario, they rated four possible causal explanations for why the teacher thought the student failed: bad luck, lack of effort, low ability, and the teacher made the task too hard.

Results and Discussion

The data analysis indicated there are particular affect-attribution associations. In Table 1 are the mean ratings for each attribution given a particular affect and collapsed across age groups. It is evident from Table 1 that, given anger as the expressed affect, effort is the inferred cause; pity is linked with ability (and is especially disassociated from effort ascriptions); guilt is strongly associated with teacher/task attributions; effort is again the inferred cause given surprise as the affective response (ability is especially not endorsed as the perceived cause given a surprise reaction); and there is no clearly dominant inference given the reaction of sad, although ability is the most high rated of the possible causes.

Within each affect, two-way ANOVAs with age and cause as the variables were performed. These analyses yielded significant main effects of cause for all of the emotions: anger, $F(3,492)=220.00$, $\eta^2=.48$; pity, $F(3,492)=38.97$, $\eta^2=.15$; guilt, $F(3,492)=150.72$, $\eta^2=.39$; surprise, $F(3,492)=62.87$, $\eta^2=.20$; and sad, $F(3,492)=5.19$, $\eta^2=.01$. The substantial proportion of variance accounted for by anger and by guilt indicate that these affects have the strongest links to specific causal ascriptions.

Two-tailed correlated t-test comparisons of the predominant affect-cause linkage vs. the secondary causal inference within each affect revealed that the dominant affect-cause association is significantly greater ($p<.001$) than the second most likely causal inference in all cases except given the affect of sad ($t<1$).

A five (affect) X 4 (cause) X 3 (age) analysis of variance

Table 1

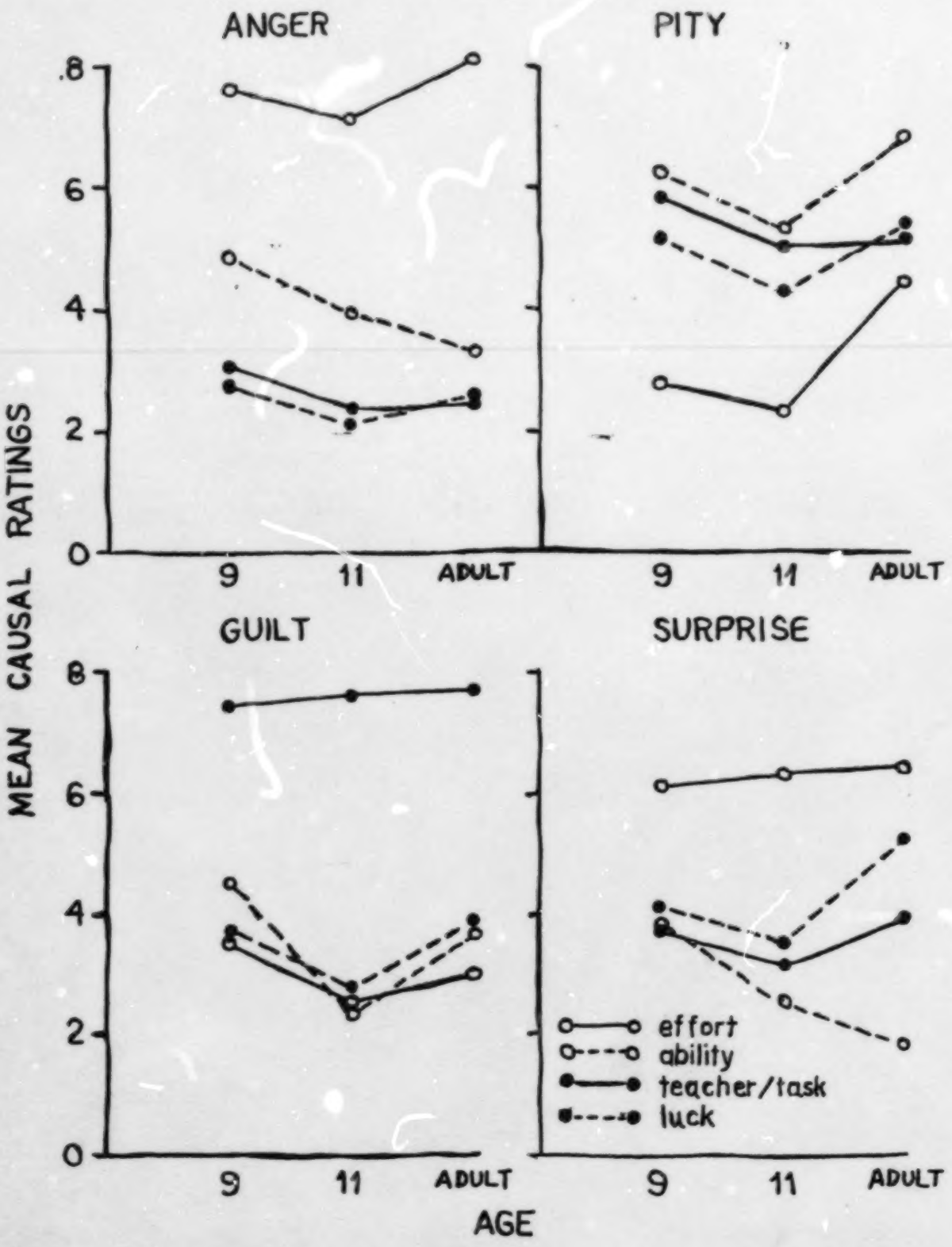
Mean Causal Ratings as a Function of Reported Affect Collapsed Across Age Groups

| Cause | Affect | | | | |
|---|---|---|---|---|---|
| | Anger | Pity | Guilt | Surprise | Sad |
| Effort | 7.7 | 3.3 | 3.0 | 6.3 | 4.8 |
| Ability | 3.9 | 6.1 | 3.8 | 2.6 | 5.4 |
| Teacher/task | 2.5 | 5.3 | 7.6 | 3.6 | 5.1 |
| Luck | 2.5 | 5.0 | 3.5 | 4.4 | 4.4 |

(ANOVA) with repeated measures on the first two factors yields a significant Affect X Cause X Age interaction, $F(24, 1968)=2.93$, $p < .01$, and a significant Affect X Cause interaction, $F(12, 1968)=110.64$, $p < .0001$. Although the Affect X Cause X Age interaction was significant, it accounted for only a minor portion of the variance in the causal ratings ($\eta^2=.01$). This weak interaction, coupled with the large Affect X Cause effect ($\eta^2=.24$) indicates that, in this experiment, age has relatively minor effects on the affect-attribution linkages.

The data for four of the affects (sad is not included), plotted as a function of the perceived cause and age of the respondents, are shown in Figure 1. What is most striking is the consistency of the findings across age groups (as revealed in the weak Affect X Cause X Age interaction). Within each of the four affects, the 3 (age) X 4 (cause) ANOVAs revealed that the interaction effects with age for all of the affects but guilt are significant ($p$ values range from .05 to .001). However, these interactions account for relatively little of the causal rating variances ($\eta^2$ ranges from .01 to .04). Two-tailed correlated t-test comparisons of the dominant affect-cause association versus the secondary causal inference within each affect indicated that, among the 11 and 9-year-olds, only given the affect of pity is the linkage with the predominant cause (ability) not significantly greater ($t < 1$) than the association with the next most likely causes (teacher/task and luck). Among the adults, the response of ability given the affect of pity is significantly greater than the next most dominant response, $t(69)=4.33$, $p < .001$. This pattern of results suggests a meaningful developmental change with regard to the interpretation of pity.

FIGURE 1


ANGER
PITY
GUILT
SURPRISE
MEAN CAUSAL RATINGS
8
6
4
2
0
9
11
ADULT
AGE
effort
ability
teacher/task
luck

In conclusion, affects can function as cues concerning the perceived causes of an achievement outcome. The data indicate that children as young as nine years of age are adept at using affective cues to understand the unexpressed thoughts of others. The only significant developmental finding that appears in these data concerns the perceived connection between pity and lack of ability, which is clearly evident only among the adult subjects. To pursue this developmental finding as well as a possible developmental change in the association between anger and effort, a second experiment was conducted with younger children as participants.

Experiment 2: Nine-, Seven-, and Five-Year-Olds

Three groups of children participated in Experiment 2. There were 36 nine-year-olds, 37 seven-year-olds and 30 children enrolled in a nursery school. The demographic characteristics of the schools these children attended were similar to those of the university-affiliated elementary school, with students of mixed backgrounds, abilities and socio-economic levels.

The subjects were tested individually. The task materials and the experimental procedure were modified for use with the younger participants. Pilot testing indicated that the young children had difficulty interpreting guilt and surprise as possible affective reactions of teachers in an academic context. In addition, the luck attribution for failure was not clearly understood. It was decided therefore to pursue only the issues of the perceived relations between anger-effort and pity-ability.

To simplify the task subjects were read only the two scenarios depicting teacher affects of anger and pity, and only the ability and effort causal attributions were presented.

The two affect scenarios and the two causal attributions were counterbalanced, yielding four stimulus orders. To make the stimuli less abstract, illustrations accompanied the verbal presentation of both the scenarios and the causes.

For each scenario, subjects were first asked to choose between effort and ability as the more probable cause of the student's failure. Following this dichotomous choice, subjects rated their causal attribution. The rating scale consisted of four boxes arranged vertically on a response sheet, with the largest box at the top and successively smaller boxes below. Subjects rated the magnitude of their causal ascription by marking an "X" in the chosen box. Ratings were elicited by asking the child whether ability (effort) was a whole lot, a lot, some, or little of the cause why the student failed. While asking these questions, E pointed to the appropriate box. After a rating was obtained on the first attributional choice, subjects were asked whether the other attribution was a possible cause of the student's failure. If the response was "yes", then that cause also was rated. In this manner, it was possible to obtain relatively independent ratings of the two causal inferences.

Results and Discussion

Table 2 shows the causal alternative selected as a function of the communicated affect and age of the subjects. A 3 (age) X 2 (affect) ANOVA with repeated measures on the second factor yields main effects for age, $F(2, 100)=5.99$, $p < .005$ and for affect, $F(1, 100)=20.70$, $p < .0001$. Both the anger-effort and the pity-ability associations increase with age, and the anger-effort relation is the stronger of the two linkages. Among all subjects

Table 2

Percentage Choice of Effort Given the Anger Cue and Ability Given the Pity Cue, as a Function of Age

| Linkage | Age | | |
|---|---|---|---|
| | Nine | Seven | Five |
| Anger-effort | 100% | 89 | 77 |
| Pity-Ability | 72 | 62 | 50 |

groups, the anger-effort union is significantly greater than chance ($p < .01$), while this is true only among the nine-year-olds given the pity-ability association. The Age X Affect interaction is not significant.

For the causal ratings a 2 (affect) X 2 (cause) X 3 (age) ANOVA with repeated measures on the first two factors yields a significant Affect X Cause X Age interaction, $F(2,100)=10.13$, $p < .0001$. Separate two-way ANOVAs with affect and cause as variables were conducted within each age group. Among the five-year-olds, the Affect X Cause interaction is not significant ($F < 1$). Among the seven-year-olds, there is a significant Affect X Cause interaction, $F(1,36)=36.89$, $p < .0001$, $\eta^2=.20$. Ratings of effort exceed those of ability given anger as the cue, $t(36)=6.37$, $p < .0001$. There also is a significant Affect X Cause interaction among the nine-year-olds, $F(1,35)=48.09$, $p < .0001$, $\eta^2=.25$. Effort ratings exceed pity ratings when anger is the cue, $t(35)=8.38$, $p < .0001$, and ratings of ability are greater than ratings of effort given the pity cue, $t(35)=2.03$, $p < .05$.

The next set of analyses compare the ratings between, rather than within, the age groups. Comparing the linkage of effort-anger between ages reveals that the mean ratings of the five-year-olds are significantly lower than the ratings of the seven- and nine-year-olds; respectively, $t(65)=2.13$, $p < .05$; $t(64)=2.41$, $p < .02$. On the other hand, given the ratings of pity-ability, the five- and seven-year-olds gave virtually the same responses, with significantly lower mean scores than were exhibited by the nine-year-olds; respectively, $t(64)=2.34$, $p < .05$; $t(71)=2.72$, $p < .01$. Turning next to the "incorrect" anger-ability ratings, five-year-olds exhibit higher scores than both the seven- and nine-year-olds;

respectively, $t(65)=2.31$, $p < .01$; $t(64)=3.41$, $p < .001$. For the pity-effort ratings, the seven-year-olds unexpectedly display less endorsement of this linkage than either the five- or the nine-year-olds; respectively, $t(65)=2.38$. $p < .05$; $t(71)=2.06$, $p < .05$.

The entire pattern of choice and rating data reveal developmental changes in children's inferences about the hypothesized affect-attribution linkages. The anger-effort association was, to some extent, displayed by all age groups, although only weakly by five-year-olds. The pity-ability linkage was evident only among the nine-year-olds.

## General Discussion

The major goals of this research were to examine the associations between teacher-communicated affects and specific causal attributions in a typical school achievement setting and to investigate the development of the hypothesized linkages. As expected there were particular linkages to causal attributions for all displayed emotions except sadness. Further, there were developmental changes in children's abilities to infer affect-attribution relations. For example, the anger-effort association emerged earlier than the pity-ability linkage and was more strongly displayed by all age groups. The pity-ability linkage, on the other hand, was not displayed by children before the age of nine.

An implication of the research is that seemingly helpful emotional reactions of pity and sympathy from teachers may convey an attributional message that lowers students' self-esteem by implying that filure is due to low ability. While attributional information that lowers the student's self-esteem is unlikely to be communicated directly by teachers, there are a number of in-

direct cues in classroom contexts that may transmit a low ability message. For example, Brophy and Good (1974) have documented that teachers infrequently call on students perceived as low in ability and give them only a short amount of time to answer when they are having difficulty. It also has been documented (Meyer et al., 1979) that praise for success at an easy task and the absence of criticism for failure at such tasks may lead the recipients of these feedbacks to infer that he or she is low in ability. These types of teacher behaviors are probably undertaken to protect the self-concepts of students perceived as low in ability, but the attributional message conveyed may be counter-productive to this goal.

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